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DISEASE CONDITIONS IN THE FALLOPIAN TUBES AND OVARIAN BURSAE OF CATTLE

BY

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The majority of authors agree that this group of conditions is much more common than is often assumed. Carpenter, Williams & Gilman (1921) found pathological changes in the oviduct in 15·3 per cent. of the sexual organs of 1,221 cows. The same figure applies to Germany (Richter, Kokkonen & Roth, 1927) and South Africa (Quinlan, 1929). Krupski (1922) in a study of the changes in the oviduct and ovarian bursae in slaughterhouse material found an incidence of 3 per cent. in 1,855 cows and 1 per cent. in 900 heifers. Rowson (1942) in a study of 296 slaughterhouse cows found pathological changes in 40 (13 per cent.), 18 of these were bilateral, 14 right sided and eight left sided. Spriggs (1945) in an examination of 1,250 living, sterile cows found changes in 50 (4 per cent.), 17 of these were bilateral, 23 right sided and 10 left sided. Davison (1944) studied 100 slaughterhouse cows and found changes in 25 per cent. Cembrowicz (1946) having investigated slaughterhouse organs from 730 cows and 300 heifers found changes in 8·9 per cent. of cows and 2 per cent. of heifers. Skaarup-Thygesen (1949) examined 1,614 normal slaughterhouse animals and found 142 (8·8 per cent.) with changes in the oviduct or bursa. Of the cows examined 242 were pregnant and in this group only two with pathological changes were noted. The changes in the 142 cases were in 33 cases bilateral, in 77 cases right sided and in 32 cases left sided. Lombard, Banner & McNutt (1951) carried out slaughterhouse examination of 154 clinically sterile cows of which 98 (63·6 per cent.) showed changes in the oviduct and bursa.

All authors have noted that pathological changes are more common on the right than on the left side. This is attributed to the greater incidence of ovulation and pregnancy on the right side than on the left. Thus Lagerlöf (1939) determined that in the Swedish Red and White breed pregnancy occurred on the right side in 62 to 63 per cent. of cows. In the more intensively managed herds right sided pregnancy was even more common. Erdheim (1942) in an examination of 1,506 pregnant cows noted that right sided pregnancy occurred in 67·4 per cent., left sided pregnancy in 31·5 per cent.; 1·1 per cent. were twin pregnancies. Corresponding results are given by Spriggs, who examined 153 cows, of which 58·8 per cent. were pregnant on the right side and 41·2 per cent. on the left. The same author noted that ovulation from the right ovary occurred in 362 cases and in 259 cases from the left ovary. Richter & Götze (1950) and Wright (1945) have found that the ratio of the number of right sided pregnancies to left sided in 60 : 40. Skaarup-Thygesen found Graafian follicles bilaterally in 14·3 per cent., in the right ovary in 53·5 per cent. and in the left ovary in 32·5 per cent. of 413 cows. This author weighed the ovaries from 102 cows and found that the right ovary had an average weight of 12·2 g. and the left ovary 9·0 g. Lagerlöf & Boyd (1953) found that in 275 pregnant Swedish Highland cows, 62·9 per cent. were pregnant on the right side, 35·3 per cent. on the left, and the remaining 1·8 per cent. were twin pregnancies.

AETIOLOGY

The aetiology of disease conditions in the fallopian tubes and ovarian bursae of cattle is very variable. All the earlier authors consider that in most cases these conditions are secondary to uterine infections associated with tuberculosis, abortion, retained afterbirth, pyometra, endometritis, etc. Hermansson (1928; 1938; 1939; 1940) found that the majority of changes of the salpinx were connected with tuberculosis. Hydrosalpinx, not specially common in heifers, has been attributed partly to infection from the milk in calfhood, and partly to normal ovulation (adhesions to normal corpus luteum periodicum). Boyd (1944), Gilmore (1949) and Spriggs think that "white heifer disease" is a common cause of secondary hydrosalpinx. In Spriggs's 50 cases three were heifers, six were first-calf cows and the rest were older. All later authors regard sterility treatment (enucleation of the corpus luteum, irrigation of the uterus, stilboestrol treatment, etc.) as a very important aetiological factor. Leu (1942) noted adhesions after irrigation with 100 ml. of Lugol's solution (1 : 2 : 100). Davison states that the most important aetiological factor is the bleeding associated with enucleation of the corpus luteum and with normal ovulation. Spriggs considers that pathological conditions of the fallopian tubes and ovarian bursae are due to: (*a*) retained afterbirth, pyometra, endometritis, (*b*) "white heifer disease," (*c*) cysts, (*d*) rectal manipulations. At the same time he says, however, that about half of the cases had been treated with Lugol's iodine and stilboestrol, and that a great deal of his material was derived from two herds in which intensive sterility treatment was practised. Skaarup-Thygesen gives as causes: (1) sterility treatment, (2) endometritis caused by (*a*) retained afterbirth, (*b*) abortion, (*c*) dystokia.

In connection with the aetiology it can be mentioned that Heckhausen (1950) in his studies concerning haemorrhage following manual treatment of the ovaries, found that enucleation of the corpus luteum can give rise to loss of as much as 7 litres of blood. When a persistent corpus luteum was enucleated the maximum amount of bleeding was 1 litre; but in 25 cases when corpora lutea periodica were removed bleeding of 1 to 3 litres resulted in 22 cases.

The absence of diseases of the fallopian tubes in the mare is explained by Richter *et al.* (1927) as due to the papilla-shaped uterine extremities of the fallopian tubes in contrast to the gradually narrowing ends of the uterine horns in the cow. The bacteriological background of cases of salpingitis associated with infection is very variable: *C. pyogenes*, streptococci, staphylococci, *E. coli*, etc. Most authors think that pyogenes infection is the most common. Brucella infection, on the other hand, is very rare. Hunds

berger (1925) and Dawson (1950) have found bacteria in the oviducts of completely normal cows and even pregnant animals, and so their occurrence is by no means sufficient for the diagnosis of salpingitis. Dawson examined the oviducts of 19 healthy cows (six of them pregnant) and in eight of these found bacteria (Pseudomonas, Neisseria, Proteus). The changes observed by Cembrowicz could be classified as follows: cysts and nodules 30, hydrosalpinx 15, adhesions 28, and tuberculosis 19. Lombard *et al.* found cysts and nodules in 87 cases, and salpingitis including hydrosalpinx in 22 cases.

Diagnosis

Diagnosis is often considered to be difficult. In rectal examination two or three fingers are inserted into the bursa and the thumb on the opposite side. It is then possible to palpate the oviduct and ovarian bursa by rolling them between the fingers and thumb. These manipulations often cause the cow to strain and so epidural anaesthesia may be necessary.

Fossum (1938), Hetzel (1943) and Cseh (1942) have diagnosed diseases of the ovarian ducts with the help of air insufflation. They have constructed special apparatus for the purpose. Fossum listened to the escaping air by means of a stethoscope inserted into the rectum. He found that insufflation is not satisfactory at the time of oestrus or on the days immediately following. Hetzel found that insufflation of healthy fallopian tubes requires a pressure of 60 to 100 mm. When the fallopian tubes are free the pressure gradually falls to 40 to 60 mm., with some difference between cases where both oviducts are free and where only one is blocked. With complete blockage the pressure does not fall. However, a sudden fall to nil means that the air has penetrated the uterine mucous membrane. The passage of air can be easily detected *per rectum*: the oviducts swell to a diameter of up to 3 mm., become firm and show peristaltic movement. The escaping air can easily be felt at the ostium abdominale or heard with the help of a stethoscope at the flank as a slow gurgling sound.

Prognosis

Prognosis is regarded by most authors as bad (Richter, Williams, Rowson, Spriggs, Wright, Cembrowicz, Skaarup-Thygesen). Skaarup-Thygesen has classified the changes in 142 animals in the following manner: (1) 33 bilateral—30 incurable, three eventually curable. (2) 109 unilateral—62 incurable, 36 eventually curable, and 11 very likely curable. A more favourable prognosis is given by Hetzel and Cseh.

Therapy

In general treatment of the causative condition (pyometra, endometritis, etc.) general stimulation of the genital system and vaccine therapy are recommended. Williams (1943) proposes that ovariectomy on the affected side (the bursa and tip of the uterine horn are also removed) should be performed to prevent necrosis of the chorion when the cow becomes pregnant. Manual breakdown of the fine adhesions is recommended by some authors and flatly condemned by others as certain to cause even worse adhesions. The majority of authors (Mai, 1924; Stoss, 1925; Williams, 1924, 1925; Cembrowicz) do not approve the insufflation method carried out by Rubin (1925) in the human subject because of the danger of rupturing the uterus and causing peritonitis. Moench (1925), Hetzel, Cseh and Fossum have all used this method and describe it as harmless and moderately effective. To break down light adhesions, blow away collections of secretion, and correct the position of the oviducts, a pressure of 100 to 120 mm. is required. Risk of rupture begins with a pressure of over 125 mm. (on the average 180 mm.). Even then real rupture of the uterus does not occur, the air only forces its way through the uterine mucosa and gathers in the lig. lata and occasionally in the lig. intercornualia. Penetration of the mucous membrane is regarded by Hetzel as completely without danger, and produces no symptoms except in cases in which there are purulent processes, and in these cases insufflation is contraindicated.

In order to determine the prevalence of the conditions described above, their type and aetiology, a study of normal slaughterhouse and clinical material was begun in the autumn of 1950. This consisted of examination of the sexual organs of Swedish Red and White cattle and Swedish Highland cattle, and a clinical study of cattle of the Swedish Red and White breed.

Material and Method

The material was divided into (*a*) slaughterhouse material consisting of the sexual organs from 1,622 cows of the Swedish Red and White and Swedish Highland breeds, and (*b*) clinical material, which was made up of 516 sterile animals examined in 1950-51. As far as possible the clinical diagnosis was verified at slaughter.

Results

The following results have been obtained:—

	Number of animals	Number with changes in oviduct and/or bursa	Per cent.
Slaughterhouse ...	1,622	251	15·5
Clinical	516	25	4·8

As the slaughterhouse material included some organs which were specially obtained because they were pathological, the percentage for this material may be a little high.

The changes were localised as follows:—

	Number of animals	Bilateral	Right	Left
Slaughterhouse ...	251	60	108	83
Clinical	25	9	10	6

Explanation of Plates

Fig. 1. Left horn of the uterus with ovary and bursa. In the infundibulum tubae is an enucleated corpus luteum, from which there are adhesions to the uterus, ovary and bursa. (*a*) adhesions, (*b*) hydrosalpinx, (*c*) enucleated corpus luteum as the centre of the adhesions.

Fig. 2. Uterus and adnexa of a heifer repeatedly treated manually. In the infundibulum tubae there is a mass of connective tissue. (*a*) adhesions, (*b*) hydrosalpinx, (*c*) mass of connective tissue in the infundibulum tubae.

Fig. 3. Left horn of the uterus and adnexa. The ovary is covered by adhesions formed round the remains of a large haematoma. (*a*) adhesions, (*b*) hydrosalpinx, (*c*) ovary covered by connective tissue.

Fig. 4. Uterus and adnexa of a heifer. In the bursa there is an organised haematoma of unknown origin. (*a*) adhesions, (*b*) haematoma in the right bursa.

Figs. 5 and 6. Left and right adnexa and parts of the uterine horns. On the right horn are the centre of adhesions covering the whole uterus there is an enucleated corpus luteum. In spite of the severe changes in the right bursa the cow is pregnant in the right horn, and a corpus luteum of pregnancy can be seen in the right ovary. (*a*) adhesions, (*b*) enucleated corpus luteum as the centre of the adhesions, (*c*) corpus luteum of pregnancy.

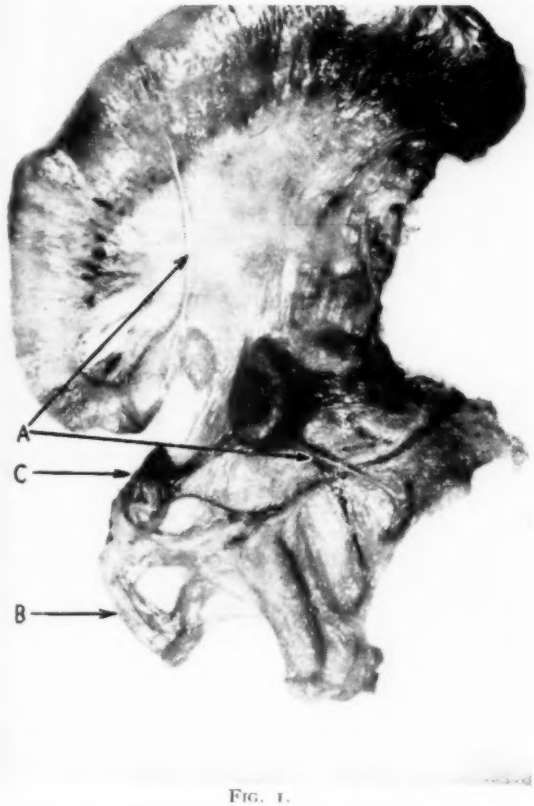
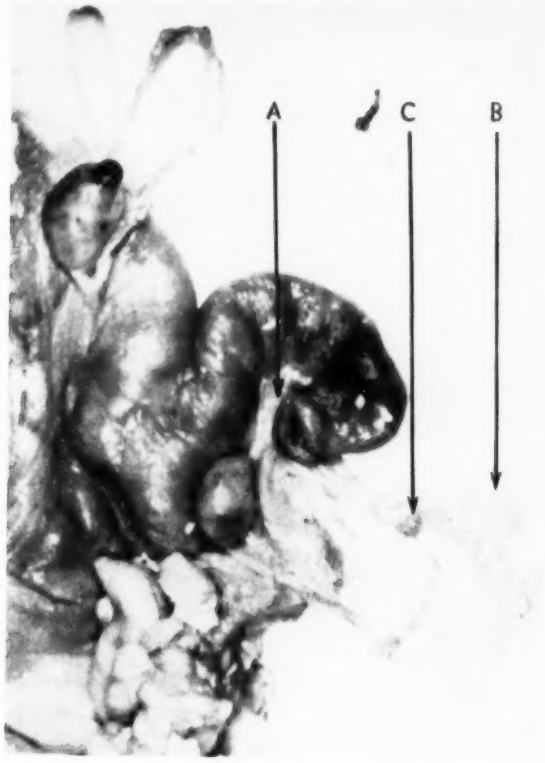


FIG. 1.



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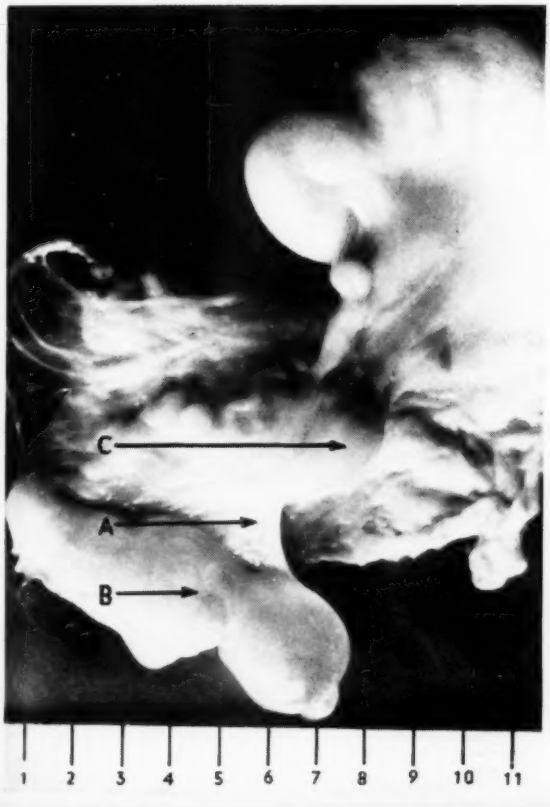

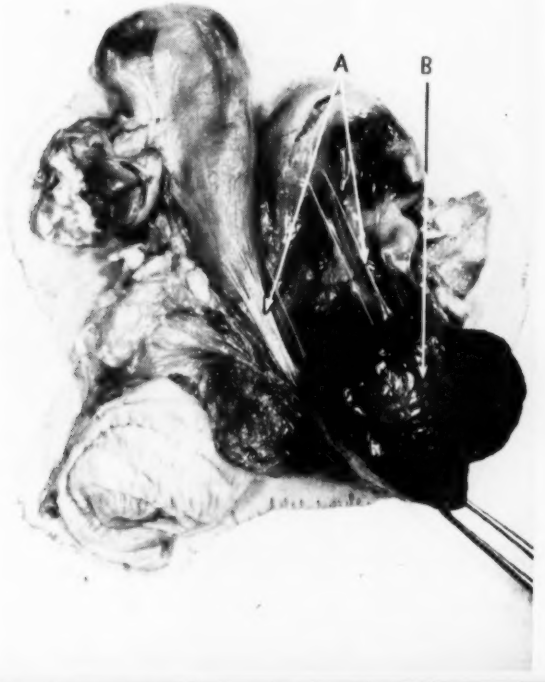

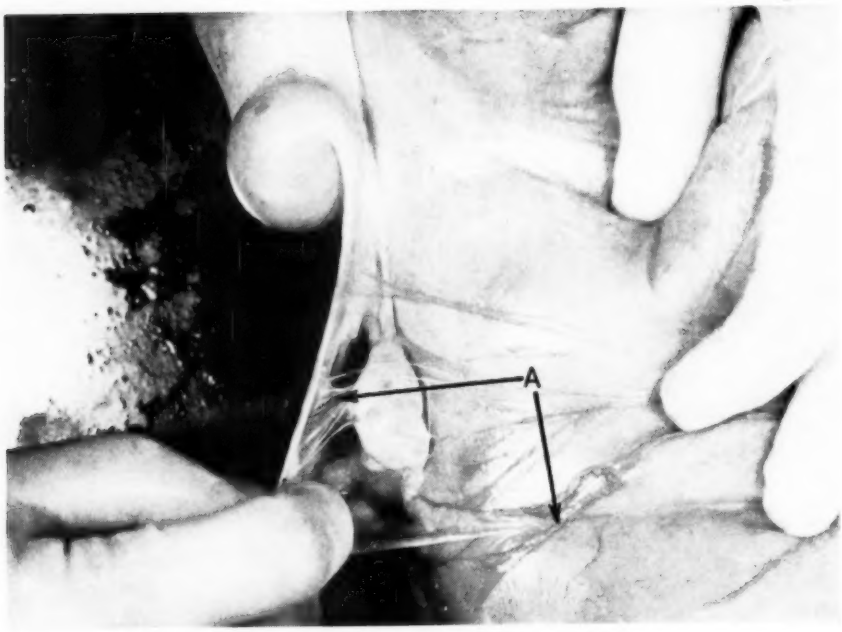

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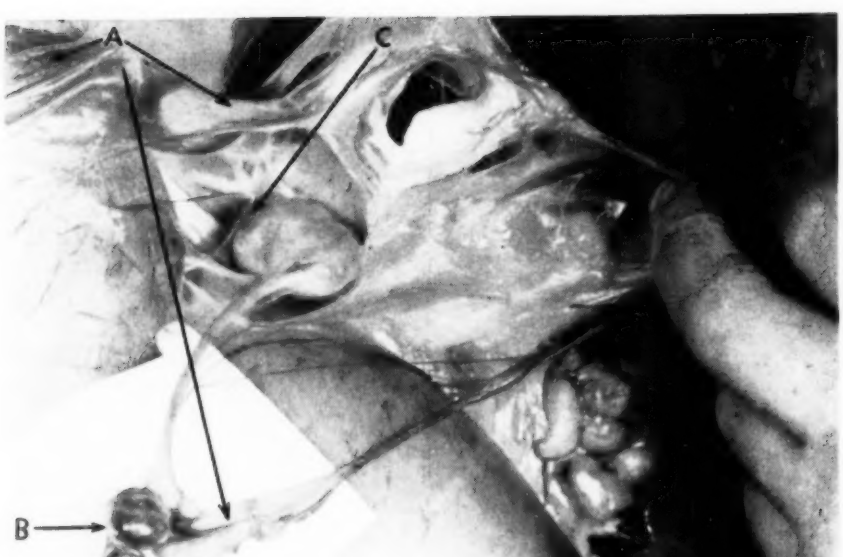

FIG. 6.

The higher frequency of right sided changes is partly because ovulation occurs more often in the right ovary and partly because treatment of the right ovary is more common.

As regards the type of pathological changes encountered the following division was noted:—

	Number of animals	Malformation, cysts, etc.	Changes due to disease	
			Adhesions	Hydrosalpinx, etc.
Slaughterhouse	251	69	192	7
Clinical ...	25	1 (agenesia)	20	4

Discussion

This investigation has shown that pathological changes in the fallopian tubes and ovarian bursa are quite common. On the other hand, they do not necessarily always cause reduced fertility. Of 69 cases of cysts or nodules only in three cases was complete blockage due to displacement of the tube observed. Similarly adhesions, and even strong adhesions, were noted in pregnant cows.

As Sweden in 1950-51 was practically free from tuberculosis there occurred no case of the formerly very common condition of tuberculosis of the fallopian tube. Hermansson (1938; 1939; 1940), a little over 10 years earlier, found that it occurred quite often in the same breeds.

In the great majority of cases the initial changes have been of the descending type, *i.e.*, adhesions in and between different adnexa. These have originated partly from scars in the ovaries and more or less resorbed and organised haemorrhages which could have resulted from either normal ovulations or manual ovarian treatment, and partly from adhesions to an enucleated corpus luteum lying in the bursa or adherent to some of the organs. All serious cases with complete blockage of the fallopian tube combined with hydrosalpinx, etc., were due to rather extensive haemorrhage of unknown origin or caused by manual treatment of the ovary. On clinical examination extensive adhesions have been noted in cases where the corpus luteum has previously been enucleated, and, more rarely, following irrigation of the uterus with or without associated perforation. With conservative treatment a number of these adhesions have apparently been resorbed completely in quite a short time. Accordingly, pathological changes, which are thought to be acute, should be judged very carefully. On the other hand, the prognosis in chronic cases should be regarded as very doubtful.

As therapeutic measures in these conditions are not very promising, prophylaxis is most important. In treating retained placenta, pyometra and endometritis large quantities of liquids, high pressures and strong solutions should be avoided. Similar effects can be caused by the use of too large doses of oestrogens (stilboestrol, etc.) in treatment of retained afterbirths and metritis. In uterine treatment it is presumably advisable to avoid the use of invert soaps as these relax the uterine smooth muscle and this facilitates the transfer of fluids from the uterus to the fallopian tube. Care and discrimination should be shown in manual ovarian treatment, especially as regards enucleation of the corpus luteum. Expressing the corpus luteum at the peak stage can easily cause considerable bleeding because of the great vascularity, while on the other hand, enucleation at a later stage often requires much more force so that the surrounding tissues are damaged with similar consequences. Repeated enucleations at short intervals are especially to be avoided. This often is a matter of overcoming the owner's impatience; the cow has to come into heat and conceive within a certain time to maintain her production, etc. And finally, if it is necessary to enucleate a corpus luteum it is absolutely essential to ensure that it does not fall into the ovarian bursa by expressing it into the hand and dropping it into the peritoneal cavity. The author has tried insufflation of the fallopian tubes, as recommended by Moench, Fossum, Hetzel and Cseh, in fresh genitalia from the abattoir, with very unsatisfactory results. In all cases rupture occurred before perflation was achieved. Moreover, it is doubtful if the result of breaking a strong adhesion will be sufficiently permanent for a fallopian tube treated in this way to function satisfactorily for transport of the ovum and to act as a suitable site for conception. It is clear that mucous plugs can be removed in this manner, but then it would seem likely that they would also be removed with the greatly increased secretion at oestrus. In these cases the basic trouble very probably lies elsewhere.

Summary

The author has examined the sexual organs of 1,622 cows (normal slaughterhouse material) and, clinically, 516 sterile cows to determine the frequency of occurrence of pathological changes in the fallopian tubes and ovarian bursae, their location and their type. The author thinks that the great majority of these are of descendent nature and caused by adhesions to haemorrhages of either physiological origin (in connection with ovulation) or therapeutic origin (uncritical or inefficient manual ovarian treatment). The author advises that care should be taken in enucleation of the corpus luteum periodicum, and warns against repeated enucleation of the corpus luteum at short intervals and against allowing the corpus luteum to fall into the ovarian bursa or lie in the pelvic cavity after enucleation. Any treatment causing high intrauterine pressure (large quantities of liquids, large doses of oestrogens, etc.) should be avoided, as should the use of disinfectants lowering the surface tension (invert soaps).

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ODD SHOES

BY

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Volume 9 of the 1836 *Veterinarian*, page 43, reproduces an article by William Moorcroft*, one of the most remarkable men to practise the veterinary art. Its subject is the prevention of "cutting" in horses. It is stated there that the article originally appeared in a "veterinary periodical" in 1828. I have discovered the original article, a pamphlet dated 1800, but not the intermediate version of 1828. The interest lies in the description by Moorcroft of a simple experiment which put in question one of the traditional practices current among the farriers of his day.

Moorcroft shod a horse with plain foreshoes of even thickness all round. He trotted the animal on soft ground at eight miles per hour, and noted that the distance between the imprints of the forefeet, at right angles to the line of progress, was 9½ inches. He then changed the shoes for a pair with thickened inner quarters. The measurement now proved to be 8½ inches between the forefeet. When the thickening was transferred to the outer quarter the distance increased to 11 inches. Moorcroft therefore concluded that the proper shoe to be applied to a horse that "brushes" or "cuts" was one with a thick outer quarter.

It would be worth while to repeat Moorcroft's simple experiments to-day on both sound and lame animals, using at the same time cinematography to elucidate what does in fact happen. My own limited experiments were conducted in Flanders mud in the winter of 1916-17, and since I found that brushing seemed to be remedied by thickening either the outer or inner quarter—a most unsatisfactory finding at first sight—I had to seek consolation in the hypothesis that it might be just the unusual sensation induced by an uneven pair of shoes that stimulated the local neuro-muscular apparatus to, as it were by accident, take the necessary avoiding action. There is room for quite a lot of theoretical meditation here.

Thus in Fig. 1, at the top half of the drawing above the line e—e, we have a diagrammatic outline of a horse's forelegs seen from the front, and viewed in plan below the same horizontal line—(*a*) being the normal, plain-shod stance; (*b*) the stance, exaggerated for clarity, with a thick inner quarter to the shoe; (*c*) the stance with the outer quarter thick. Since many brushing horses have a slack ligamentous make-up at the fetlock one might allow that the angulation of the fetlock joint in a lateral direction would be as shown in the dotted angle (*f*), that is, nearer, in sketch (*c*), to the opposite foot as it passes. Also the passing foot at (*c*) will, due to the outer thickening of the shoe, tend to have a curved path x—y, theoretically increasing the chance of a brush. Since this brush does not occur as Moorcroft observed, rather the opposite, we have to think again to find the reason for the empirical finding. One asks, does the path of the swinging foot alter at all with the change of shoe? Perhaps it is in the changed stance of the supporting limb resting on the ground to which the cessation of brushing must be ascribed?

These are questions that may very well be decided by cinematography. I am not aware that the effect of thickening the quarter of the shoe of the affected limb has ever been tried. It is a simple thing to do, and might well be illuminating, but like many simple ideas, it has been half a century arriving into my mind.

That Moorcroft was an original thinker and experimenter in the matter of horse shoeing is shown by his booklet with the title "A Cursory Account of the Various Methods of Shoeing Horses" dedicated to Lord Heathfield and published in 1800. Here we find the earliest account of Moorcroft's brushing experiments. But more intriguing still is an account of a shoe manufactured by a die-stamping process of Moorcroft's invention, which shoe possessed extraordinary longevity. There are letters reprinted in the *Veterinarian* (1846. **19.** 446) indicating that Moorcroft attempted to float a company for the manufacture of his patent shoe. He failed in this, and lost a great deal of money over it.

On p.16 of Moorcroft's pamphlet, describing this shoe, he states: "On the nineteenth of November, 1797, a charger belonging to Lord Heathfield was shod on his forefeet with seated shoes 'struck in dyes,' after the manner in which money is coined. The same individual shoes have been worn ever since that period to the present day—March 25th, 1800. They have been removed regularly once every month . . . but have never been altered . . . except once . . . when it was necessary to make them a quarter of an inch wider, the feet having spread so much."

Had Moorcroft found the perfect metallurgical formula for the mass production of horseshoes? The prejudice of the farriers of his day was, as might be expected, the reason why his shoe died at birth, but it is tragic and tantalising that nowhere in the enormous quantity of Moorcroft's MS. does there seem to be any hint of the composition of the metal.

There was a great deal of thoughtful experiment going on throughout the nineteenth century. The earliest attempt to shoe horses with rubber may well have been that of Martin Tupper†, who narrowly missed being Poet Laureate instead of Tennyson. Tupper got into touch with Mr. South, of the Veterinary Establishment, New Bond Street, London, concerning his project, which was for a shoe "made of a judicious mixture of Caoutchouc and Gutta Percha, to be attached to the foot probably by heat." South turned down the suggestion as impracticable, yet the modern treatment of rubber to toughen it, plus the development of new powerful adhesives, might make this a present-day

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* William Moorcroft, born Ormskirk, Lancs, 1767, became a doctor after study at Liverpool, but was urged by the great surgeon John Hunter to adopt the veterinary profession. After years of practice in Oxford Street, London, in which he made a fortune, he entered the service of the East India Company in 1808. He made two epic journeys, crossing the Himalayas twice, and on the return from his second journey, occupying eight years, was poisoned by natives in 1825, dying in his 60th year. He deserves to be ranked among the greatest of veterinarians as he ranks as one of the greatest and most intrepid of explorers. His voluminous journals at the India Office Library await evaluation by a veterinary scholar.

† "Martin Tupper, His Rise and Fall" by Derek Hudson (Constable).

possibility. In 1875 Tupper had another idea for a "new anti-slippery horseshoe," in which hardened studs constituted the basic notion, but Tupper found a Frenchman had already taken out a provisional patent. He, however, did produce a leaflet describing his shoe "for the benefit of our suffering horses."

The disappearance of the horse from the road makes these forgotten ideas about horse shoeing virtually an antiquarian pursuit. But a study of the iconoclasts who throughout history have had the necessary scepticism to question the current practices of the farriers can be fascinating to the veterinary surgeon and sometimes rewarding. I remember how thrilled I was at the possibility of dividing up equine lameness into two groups by a simple method of discovering whether the pain was evinced when the lame limb was supporting weight (supporting-leg lameness) or when it was free of the ground between paces (swinging-leg lameness). I was so impressed with this means of easing the difficulty of diagnosing the obscurer forms of lameness that I rushed into print in the *Veterinary Journal* of 1917, p.162, and described how observation of the foot-prints in soft ground could distinguish between the two groups and so narrow down the field of search for the cause. I still await news that someone has repeated and confirmed this youthful enquiry of mine on the mystery of equine lameness. It is time the mantle of Fred Smith was taken up by the present generation of officers in the Army Veterinary and Remount Services and research into such problems as are dealt with here followed up. In far too many equine matters we are still the slaves of dogma and empiricism.

DESERT RECLAMATION IN TANGANYIKA

The Mbulu District of Tanganyika covers some 7,000 square miles between Arusha and Kondoa. Its people are Hamites and Bantu, nomads and farmers, but it contains important European farming areas, mountains, lakes, highland pastures and forest reserves. In 1948 a development programme was started to fight the encroaching tsetse fly and arrest the disastrous soil destruction which was turning the land into desert. The first object was to reduce the pressure of stock. With the aid of 30 days of free work a year given by every tribesman for tsetse clearing, and 15 days for village clearing, over 650 square miles have now been freed from tsetse. The development of water resources, afforestation of the denuded highlands, and improved land practices, have, in addition, brought radical changes in their way of life to some of the territory's most conservative people.

Tanganyika's first attempt at a large-scale culling campaign was undertaken as part of the scheme, and over wide areas the rate of sale was as high as one beast in five. This successful cattle culling is fundamentally opposed to the primitive way of life of the people and is therefore all the more remarkable. News of its benefits has, indeed, spread, and already two tribes in the Lake Province are co-operating in similar schemes.

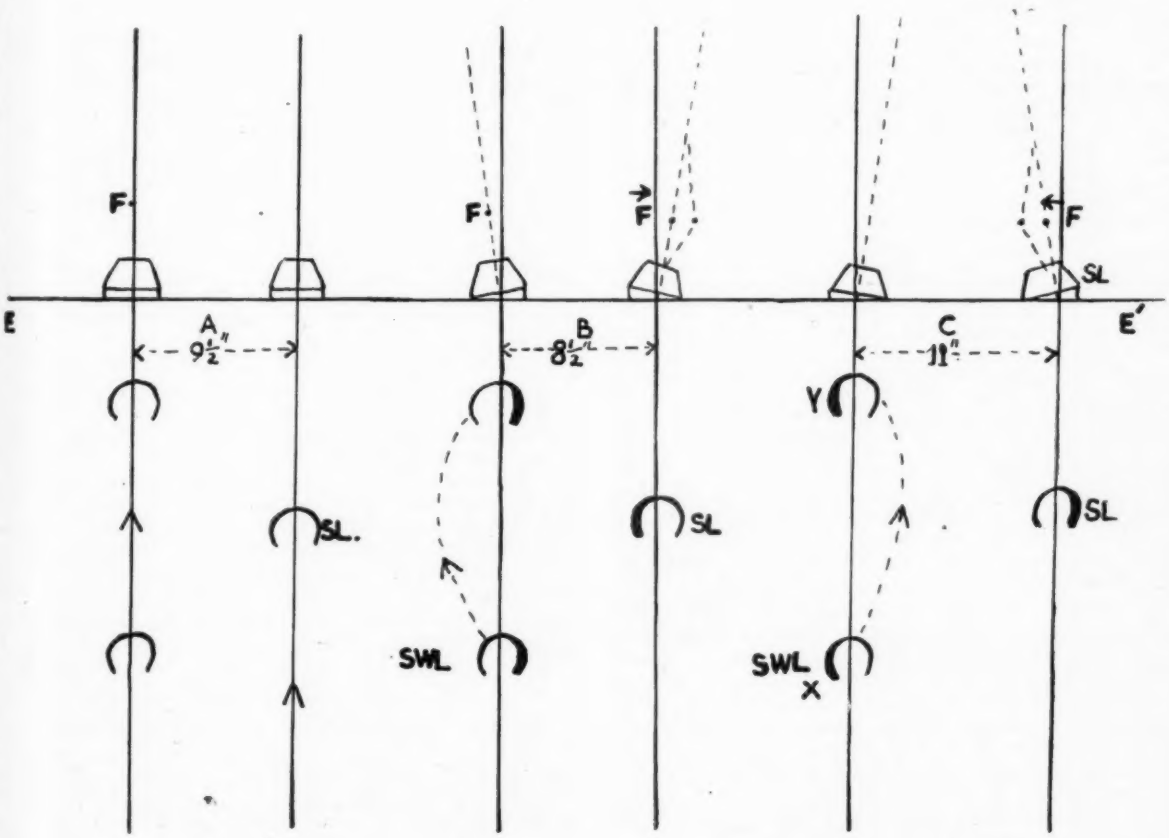

FIG. 1.—A. Plain shoe. B. Inner quarter thick. C. Outer quarter thick. SL. Supporting limb. SWL. Swinging leg. F. Fetlock. X—Y. Path of swinging limb hoof.

THE PROFESSION AND THE PUBLIC*

BY

NEIL MATHIESON, M.R.C.V.S.,

WATFORD

It is two years since I last spoke on this subject, but I do not think that any modification of the views then expressed is necessary. I hope this afternoon to put before you some thoughts that will stimulate your interest and provoke discussion.

First let me speak on public relations in general. The concept of public relations as a distinct art is a comparatively recent innovation. In one sense it derives from advertising, and in many instances the public relations officer must use all the techniques employed in advertising. But public relations is much more complicated than direct advertising. It is essential for organisations with a national function and possibly some sort of monopoly that their policy—whether a policy of service or of prices or of products—be presented fully, accurately, and fairly to the public: and, in particular, to the public affected by the organisation's activities. An example of good public relations was the way in which Tate and Lyle carried out their campaign against the nationalisation of the sugar industry, by showing how much money went on labour, packing material, etc., and how little to the shareholders. They had a particular message and that message was brought to the notice, in a very effective manner, of their public.

It is equally important that the public relations officer should be in a position to advise his employers on public reaction, and assist in the shaping of future policy. In large organisations he should be able to present management policy to the employees, and represent the employees to management.

Educating the Public

The potential value to the British Veterinary Association of a good public relations service is thus very great because, in the first place, the work of the veterinary surgeon is not at all appreciated by the public. Comparatively few members of the public have ever had personal contact with a veterinary surgeon, whereas everyone knows the medical practitioner and has some appreciation of the arduous studies he must undertake to attain his position. Yet despite this, the British Medical Association finds it advisable to maintain a first-class public relations service. Further, as the veterinary profession has a virtual monopoly of the treatment of animal disease, it is not only essential to inform the public of the services performed by the veterinary surgeon on behalf of the community, but to show that his powers are used in the public interest.

This lack of appreciation on the part of the public is made only too obvious by the willingness of so many of our clients to pay for medicine, but their reluctance to pay for professional skill and experience. It is therefore highly necessary to educate the public to appreciate the qualities necessary for a man or woman to attain membership of the Royal College of Veterinary Surgeons, and to persuade them that destruction of the aged family pet is far from the sum total of veterinary activity!

By what mechanism, then, can the B.V.A. present itself to the public? One must accept that all methods cost money, some a great deal more than others. Advertising is extremely expensive—for instance, a full page advertisement in the *Radio Times* would cost £3,200.

Far and away cheaper, and much more effective, is editorial mention. This can be most effectively achieved by having personal contacts in Fleet Street, and in the provincial Press, who come to trust the P.R.O. as a man of knowledge and integrity. Here I must pay a tribute to professional journalists for their own integrity and high sense of responsibility. When I was working in continuous contact with them I was never once let down by a breach of confidence.

There is only one criterion on which material can be judged—does it contain news to interest the readers of a particular paper? If it does, if it is properly presented, then one can be certain that the paper will use it to the best possible advantage. But no amount of personal goodwill will persuade a paper to publish something that is dreary or obviously prejudiced. It is, I think, a pity that our code of ethics is stringent to the point of exclusion of veterinary surgeons from editorial mention, because generally speaking a story has to be "hung on" an individual. This factor is, I think, accepted by the governing body of the medical profession; but the veterinary surgeon must cloak his identity and hide his professional status, of which he should be proud. In these circumstances, publicity for the profession is extremely difficult to get.

Radio is an immensely powerful organ of publicity and not nearly sufficient use has been made of it by us in the past. Again, personal contacts with the appropriate people in the B.B.C. are necessary, and it should be possible to get the point of view of the Profession put across to the listening public not only through informative talks, but by presenting the veterinary surgeon as an integral part of the community; indeed, this has been done in "The Archers."

A further use of the public relations officer is that many people, and in particular journalists, wireless commentators and others, turn naturally to the headquarters of a professional organisation for advice and guidance. The good public relations officer will go to endless trouble to help such people with their enquiries. As this service becomes known and trusted, the Association benefits considerably and its prestige is enhanced.

Certain animal welfare societies have achieved an enormous amount of sympathy by sentimentalising the work they do, and I have seen in the popular Press touching photographs of glamorous females gazing at sick or injured animals in a most heartrending manner. This sort of thing nauseates me, but I believe that it does good to the organisations concerned. There is no question at all of the fact that to many people the practising veterinary surgeon is presented as a somewhat callous individual who makes capital out of an animal's suffering, whereas the animal welfare societies are in the game entirely for the good of the sick and the suffering. Obviously it is essential to change the public attitude.

Encroachment on Private Practice

One hears of continued and increasing encroachment on private practice from a horde of individuals who have some interest—sometimes genuine, sometimes specious—in domestic animals large and small. In time, if this sort of thing goes on, it is bound to have an adverse effect on private practice. This, taken together with a growing tendency in certain quarters to think that, living as we do in a welfare state, it is only logical that the Profession should be nationalised, makes it absolutely vital for us to

*An address to the Yorkshire Veterinary Society, B.V.A., on July 17th, 1953, at Northallerton.

face the facts. Whether or not you agree that the Profession should be nationalised, we should not shrink from a consideration of this problem. It is our duty to accept our responsibilities and to make up our minds exactly where we, as a Profession, want to go. Having done that, it is the duty of a public relations officer to present our attitude and our policy to the public so effectively that they are in no doubt where the veterinary surgeon stands in the life of the nation.

I sometimes wonder if it is generally realised how frequently criticism is made of the Profession in the local Press? During my period of office as public relations officer to the B.V.A., I was shocked by the Press cuttings that arrived daily in the office complaining of veterinary surgeons' fees or of inefficient service—such as failure to turn out at night —or containing some other form of criticism, which may perhaps have been directed at an individual but inevitably hit at the Profession as a whole. Many of those criticisms arose because of complete failure to understand the function and status of the veterinary surgeon.

Discussion

The following are the main points raised during a most spirited and lengthy discussion, to which some 20 members and visitors contributed.

Mr. Mathieson agreed that co-operation and enlistment of the help of such bodies as the N.A.A.S. would produce better results than a continued sour opposition. He pointed out that a commercial monopoly may be a very bad thing, but we must remember that we were the only people able to practise veterinary surgery and such a monopoly carried great responsibilities. For example, the N.F.U. may doubt that the Profession should have control of a certain drug. The P.R.O. can present the other side of the argument. He thought we had, as a Profession, been successful in combating the suggestion that this is nothing more than a way for the practitioner to sell a few more drugs to the public, and, incidentally of course, to gain a few more profits.

The veterinary profession was small, but he believed that it could exert great parliamentary pressure. He believed that we have both power and responsibility and that these could be applied wisely and in the national interest. It was pointed out that although only one official P.R.O. could be appointed, each veterinarian could, himself, do much local propaganda by always taking advantage of such opportunities as giving addresses to organisations like Rotary and Young Farmers' Club meetings. Another method of publicity—the portrayal of the benefits given to mankind by the Veterinary Profession—was used by American advertisers in the public Press, and could with advantage be followed here. Mr. Mathieson was strongly opposed to the form of negative publicity devoted solely to the correction of misrepresentations. This he was sure did *not* help the Profession. In any event the wording of replies had to be most carefully executed to avoid leaving the impression of wielding a big stick. It was far better to be first in the field with an item rather than a bad second.

Other useful effects on the public resulted from members of the Profession being chosen for such positions as mayor. It was only rarely that a professional man had time for such posts, but the effect was therefore all the more worth while. It was pointed out that the present Prime Minister of Southern Rhodesia was a medical man. The speaker was convinced that further steps were necessary on a national basis to educate the public on the training of a veterinary surgeon and the use they could make of him. Famous names of previous members of the Profession were recalled, showing how the membership of clubs and the ability to mix well had assisted the recognition of the Profession. In wartime the Survey Scheme had been another important contributor. The Animal Health Trust was doing excellent work and it was a shame that the Profession did not take more interest in it. With the installation of country-wide laboratory and hospital facilities it would be possible to fight nationalisation.

On the subject of local speakers and anonymity, Mr. Mathieson again suggested that it was wrong not to provide the speaker's name. It was true that the present practice did avoid publicity to the individual, but it robbed the Profession of recognition. The difficulties of the matter were then debated and extended to include professional relations, fees charged, and co-operation and integration with the agricultural community. It was apparent that, at least sometimes, the teaching colleges were providing instruction in professional relations, ethics, and even personal bearing, and this was considered most praiseworthy.

A vote of thanks was passed by the meeting to Mr. Mathieson for an exposition of a subject which had provided very considerable material for thought. Both practitioners and inspectorate personnel had seen the possibilities to be obtained from the judicious use of a P.R.O., and the thanks of the meeting were given with deep sincerity.

CLINICAL COMMUNICATION

CHRONIC CONSTIPATION IN DAIRY CATTLE ASSOCIATED WITH A HIGH LEVEL OF ZINC IN THE WATER SUPPLY

J. PICKUP,
Barnet,
ALASTAIR N. WORDEN and J. BUNYAN,
Cromwell House, Huntingdon,
and
ERIC C. WOOD,
Public Analyst, Norwich

The pedigree Jersey herd which forms the subject of this communication was founded in South Hertfordshire during 1948, and consists solely of animals either imported from Jersey or home bred. During the early winter of 1950-51, when the herd was under the care of another veterinary surgeon, chronic constipation developed in all members, including the stock bull and young calves. There was an accompanying loss of milk yield in lactating animals, but every attempted treatment was without a lasting effect and the constipation was not relieved until after the end of stall-feeding in April, 1951.

During the stall-feeding period of 1951-52 the same trouble became evident. Although the condition was stated to be rather less severe than during the preceding winter, it was nevertheless extremely worrying and again accompanied by a serious diminution in milk yield. Clinical examination by one of us (J. P.) failed to reveal any indication of the cause other than the presumed continued ingestion of some astringent.

In January, 1952, an investigation was made of the system of rationing and of the chemical composition of the foods in use. Nothing untoward was detected, and rabbits to which the foods were given remained perfectly normal.

Nor did the biochemical examination of the blood, milk and urine from eight animals of varying ages produce any findings of significance.

Water Analysis

Attention was therefore paid to the water supply. Samples were drawn on February 12th, 1952, from the two sources employed for the herd during the stall-feeding period, *viz.*, a tap in the farmyard and the supply within the cowshed. The results of the analysis of these two samples for toxic metals were as follows (Institution of Water Engineers, 1949):—

	Tap in yard	*ex-Cowshed*
Lead	nil	nil
Arsenic	nil	nil
Copper	0·06 p.p.m.	0·40 p.p.m.
Zinc	8·0 p.p.m.	6·0 p.p.m.

A sample of the deposit typical of that noted in several of the water-bowls in the cowshed was likewise examined and found to consist almost entirely of calcium carbonate, with a trace of magnesium and a slight trace of zinc.

Water from the cowshed was fed as the sole source of drinking water to an experimental rabbit, the faecal pellets of which after the 10th day became fewer in number and had a lower moisture content.

The water company concerned took independent samples on March 12th, 1952. The results confirmed the level of zinc present in the cowshed supply but not that from the yard tap. The system was examined, and it was found that the water pipes supplying both the cowshed and the yard tap were of copper, while the storage tanks were of galvanised iron. It seemed probable, therefore, that the appearance of substantial quantities of zinc in the water was due to an interaction between copper and zinc. When these two elements meet under water there is frequently electrolytic action which could lead to rapid destruction of the galvanising. The difference in zinc content between the February and March samples obtained from the yard tap may well have been due to the fact that the former was drawn off after the water had been standing in the pipes overnight.

The nature of the deposit from the drinking bowl indicated that the water had contained zinc in solution for some time past. Water in contact with "new" zinc nearly always dissolves it to some degree at the commencement, but the amount of zinc passing into solution usually falls off with time as the metal acquires a protective coating. It seemed possible that during 1950-51 the water had in fact contained more zinc than when examined during February, 1952.

As a result of our findings, the galvanised tanks were thoroughly cleaned and painted twice with bitumastic paint to eliminate the electrolytic action to which reference has been made.

During the stall-feeding period of 1952-53 and again since the commencement of stall-feeding in October, 1953, there has been no further evidence of constipation or of associated falls in milk yield. The general health and condition of the animals has improved to a considerable degree. Further samples of water were examined by us on June 12th, 1953: that from the cowshed did not contain any zinc, while that from the yard tap contained only 0·5 p.p.m.

It would appear, therefore, that the severe incidence of chronic constipation was eliminated by the amendments to the water supply, with accompanying removal of the presence of significant quantities of zinc.

Discussion

The toxicity of zinc for man and animals has been reviewed by Sollman (1949) and by Monier-Williams (1949), while Nicholson (1945) has dealt with cases of veterinary interest. Marcovic (1950) has referred to the poisoning of four calves traced to zinc chloride from galvanised buckets. Orr (1952) indicates that zinc poisoning among stock may be more common than is generally realised, but that existing disease may be a predisposing factor. The experimental production of chronic zinc poisoning in pigs was recorded by Grimmett, McIntosh, Wall & Hopkirk (1937).

The widespread consumption of waters containing small quantities of zinc has led to the general belief that the toxic hazard from such sources is negligible, and this view was expressed emphatically by Dr. J. C. Thresh in a report prepared in 1915 (see Taylor, 1949, pp. 41-44).

In the course of his report Thresh referred to an instance in which the consumption of water containing zinc was regarded as the cause of constipation among children, and according to Scorgie & Willis (1952) this report is not unique. In the report on their experiments on the feeding of high levels of zinc to sheep, Lander & Edwards (1912) describe the production of "faeces small in amount, pale yellow, slimy."

The condition recorded in the present communication, and which we believe to have been due to the ingestion of zinc, was of serious economic consequence to the farmer concerned. Its prompt disappearance following alteration of the water system, with accompanying prevention of the ingestion of significant quantities of zinc, supports this view as to its origin.

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PAUL EHRLICH CENTENARY

During March 14th to 16th the 100th anniversary of the birthday of Paul Ehrlich, the "father of chemotherapy," and of Emil von Behring will be celebrated in a commemoration ceremony to be held in Frankfurt am Main under the auspices of the Paul Ehrlich Institute and the Universities of Marburg and of Frankfurt. During the celebrations the Paul Ehrlich and Ludwig Darmstaedter Prize, which is awarded by the Institute for notable achievements in the field of science to which Ehrlich made prominent contributions, will be presented to Professor E. B. Chain, who will deliver a lecture on "The Development of Antibiotic Chemotherapy." Professor Chain, who was awarded the Nobel Prize for Medicine in 1945 (jointly with Sir Alexander Fleming and Sir Howard Florey) for his work on penicillin, was formerly University Demonstrator in Chemical Pathology in the University of Oxford before his appointment to his present post as Scientific Director of the International Research Centre for Chemical Microbiology, Rome.

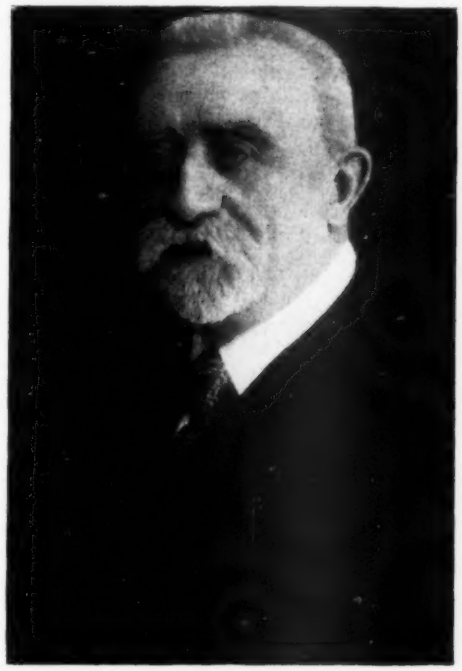
MEMOIR

EMMANUEL LÉCLAINCHE

1861—1953

An eminent personality and friend has disappeared from our midst, one of the most outstanding figures in our profession.

We can rightly speak of Emmanuel Léclainche as a friend while having in our minds both the Englishman's and the Scot's understanding of the term. For indeed he was closely attached to us by affection and he was one of a big family, the veterinary profession and its members in all countries of the world, whose interest and activities as a true kinsman he made always his immediate concern.



The impression created by his death has been very aptly compared to that created by the felling of a monarch of the forest, a dramatic event leaving in its wake a void which appears for ever irreplaceable.

Professor Léclainche was born at Piney in the "département" of Aube on August 29th, 1861, and he passed away on November 26th last in his 93rd year.

How like he was to the only one of the 12 sons of Neleus who was not slain by Hercules, who was from his earliest manhood a distinguished warrior and who although far advanced in age sailed with the other Greek heroes against Troy and having ruled three generations of men was renowned for his eloquence, wisdom and knowledge. Only death could destroy the will of such a man and the authority which he had acquired after many struggles.

It must come strangely to those who learn now that, as Léclainche himself recalled in speaking of his early years, he entered upon his training at the Alfort Veterinary School for the profession in which he became such an outstanding figure, not by vocation but by dint of circumstances and indeed by constraint.

He got his diploma in 1882 and then launched upon an uncertain career going into practice as a veterinary surgeon in Champagne in the " département " of Aube and, to quote his own words, " without any enthusiasm and without success." Although, without doubt, Léclainche was convinced in his own mind that he was not cut out for a practitioner, he did attempt publicly on one occasion to explain his failure and vindicate his professional reputation. He recounted how the peasants could not realise the existence of a veterinary surgeon who when offered the traditional glass of wine or spirit asked for a glass of milk instead! He added, slyly, " thus I inspired my rare clients with only a very limited confidence and they called upon my talents as little as possible. I believe they were right in their judgment." Léclainche was attracted rather by the possibility of teaching, documentary and scientific research. After three years of practice an opportunity presented itself for him to alter his course. After sitting a competitive examination he was appointed to the post of " répétiteur " (reader or lecturer) to the Chair of Pathology in the Alfort school. Five years later he was elected to the " Chair of Pathology of Contagious Diseases " at the Ecole Vétérinaire de Toulouse, which he held for 20 years.

During his time at Alfort, Léclainche's duties did not allow of any laboratory work. However, his spare time was spent on reading and writing and he established early his erudition and talents as a writer. He wrote a number of articles, reviews and notes for the veterinary and agricultural journals of the period, among which readers will recognise such journals as the *Recueil de Médecine Vétérinaire, Bulletin de la Société de Médécine Vétérinaire*. In addition, he wrote a number of articles for the " Dictionnaire de Médécine Vétérinaire " edited by H. Boulez Reynal and he completed the first phase of his career by writing a " Précis de Pathologie Vétérinaire " (1891) which was then in great demand as a standard text-book by practitioners and students, as no other such book had appeared for 30 years.

What an experience also for Léclainche to become the pupil and later the collaborator of Nocard, one of the disciples of Pasteur while at Alfort. This was during the glorious period of pioneer bacteriological research. He thus learned at first hand the doctrines and methods of Pasteur. He was joint author with Nocard in 1891 of an article of 120 pages in Rochard's " Encyclopédie d'Hygiene " on animal diseases transmissible to man. It is also important to remember that Léclainche was responsible for initiating a course of jurisprudence at the Alfort school during his stay there.

At Toulouse where he went in 1891 he had time and facilities for research while holding the professorial chair. Papers recording the results of his work on various diseases, glanders, tuberculosis, actinomycosis and botryomycosis, haemorrhagic septicaemia were published in divers scientific periodicals including the *Annales de l'Institut Pasteur* and *Revue Vétérinaire de Toulouse* but his most notable work was on swine erysipelas, also in collaboration with Vallée, and diseases due to anaerobic micro-organisms of the gas gangrene group. At the same time, with Nocard, Professor at Alfort, he was accumulating material for their two volumes of the classic " Les Maladies Microbiennes des Animaux " (1898) of which there were three editions, the last in 1903 having been completely reviewed and augmented. This was " crowned " by the Académie des Sciences. He also founded the *Revue Générale de*

Médecine Vétérinaire in 1903, a bimonthly periodical giving abstracts from French and foreign literature, which continued to appear for 33 years.

Twenty years of teaching and laboratory research enabled Léclainche to have a clear conception of what the French refer to as " La Police Sanitaire," the measures and regulations to be applied in the control of infectious diseases and the general methods of attack in the fight against epizootics. The need for a systematic organisation of veterinary services had been stressed repeatedly in Léclainche's journal and this finally led to his being appointed as director of veterinary services under the Ministry of Agriculture in 1911. Although his new post obliged him to withdraw from his laboratory in Toulouse, in 1913 he was made director of the laboratory for research on foot-and-mouth disease created by Nocard and Roux, a dual responsibility which he maintained until Vallée took over in 1920. Léclainche was then appointed Inspecteur Général des Ecoles Vétérinaires and since he had then the dual responsibility he had conveyed on him the title of Chief of Veterinary Services in France which he held until 1931. In the meantime he was proceeding with the fulfilment of new ideas which led to the creation of the " Office International des Epizooties " in 1924, of which he also was made director. His final retiral from his dual administrative duties as Inspector General of Veterinary Schools and Chief of Veterinary Services in 1931 allowed him freedom to assume full direction of the Office International des Epizootees. He directed this organisation with a great authority, with the assistance of the succeeding eminent Presidents, Hutyra, Boez, Berger, Flückiger and our own former C.V.O., Sir Daniel Cabot. In the spring of 1948, when he was already in his 88th year and as darkness was gradually closing around him due to failure in eyesight, he gave up the post of director of the "Office." During his period of office he undertook also the writing of a History of Veterinary Medicine which appeared in 1936. In order to achieve this masterly work, Léclainche exploited to the full his inherent qualities as a writer and historian, and his independence of spirit while applying the necessary disciplines of philosophy and literary culture. He was a born writer and he imposed himself in his writing as well as in his work and teaching. He participated in the creation of the Doctorate of Veterinary Medicine and of the Academy of Veterinary Medicine of which he was the first President.

All those who have seen him preside at the meetings of the " Office " will recall his powerful thick-set figure and authoritative delivery. He captivated his audience from the start and impressed them by his great cultural qualities, the clarity of his thought and the logic of his reasoning. He was remarkably amiable in his approach in spite of his imposing and authoritative manner. His adversaries were, however, mercilessly treated with mingled irony and causticity. Léclainche combined an interest in the welfare of his students and subordinates with a rigid discipline and demand for efficiency. He stated categorically that he sympathised with those who lacked authority but he also sympathised with those who worked under their control. His annual reports in the *Bulletin de l'Office International des Epizootics* were on the ever-changing position in the world in respect of animal health and his studies on the prevention and control of epizootics will long be of great interest and usefulness in providing his successors who carry on the torch, information, guidance and ideas essential to the development and carrying out and co-ordination of international programmes of attack on infectious diseases.

Léclainche was a close friend of Roux, the most eminent of Pasteur's collaborators and he was a frequent visitor to the Pasteur Institute. He became a member of the committee of administration of the Institute and was later Vice-President, an office which he filled for many years. He was a member of many scientific societies and associations, national and international, and in particular he was " Membre de l'Academie des Sciences " from 1917 and was elected President in 1937. His presidential inaugural address " Race and Racisme " characterised his wide culture and the clarity and depth of his thought.

He was Grand Officier de la Légion d'Honneur and Commander and Grand Officer of many foreign orders, of Roumania, Holland, Denmark, Poland and Italy.

He was elected an Honorary Associate of the Royal College of Veterinary Surgeons in 1908.

With this brief record of Léclainche's life and achievements goes our warm appreciation for all he has done to maintain and enhance the scientific administrative and cultural reputation of the profession to which he belonged. To his son, Directeur Général de l'Assistance Publique de Paris, we extend our sympathies.

I. A. G., January, 1954.

ABSTRACTS

Cross-breeding Experiments at Beltsville, U.S.A.*

It has been found that the European breeds of dairy cattle do not produce to the limit of their capacity in the hot, humid climate of the Gulf Coast region, and the aim of this experiment is to combine the milk-producing qualities of European dairy cattle with the heat-resisting qualities of Indian cattle, and so produce a strain which will be better adapted to this climate.

Late in 1946 two Red Sindhi bulls and two cows were obtained. The Sindhi females have been mated to Sindhi bulls exclusively to provide a reservoir of pure Sindhi stock, and only the bulls have been used for cross-breeding. The main plan is to cross the Sindhis with Jerseys, and a secondary plan of crossing Sindhis with Holsteins has also been established. This report deals primarily with a comparison of the first-generation Jersey crosses with pure-bred Jerseys.

Seventeen Sindhi × Jersey heifers gave an average of 8,207 lb. of milk with 5·64 per cent. of fat in their first lactation compared with 9,118 lb. with 5·61 per cent. of fat given by their Jersey dams in the corresponding lactation. Both sets of lactations were of up to 365 days in length and the cattle were milked three times a day. Later production records for the cross-breds were on two milkings a day for 305 days, which could not be compared so easily with the dam yields.

Growth in the early stages, as determined by bodyweight, was slightly more rapid for the first-generation cross-breds than for their Jersey dams, but the weights of the two groups became almost identical as they approached maturity. The general body conformation of the crosses showed many of the Sindhi characteristics, particularly in the slope of rump, length of head, size of ears and horns, amount of dewlap, and shape of udder.

Comparative studies of heat tolerance of the cross-breds and the Jerseys were conducted in a climatic chamber in which

* **Progress Report of the Red Sindhi Crossbreeding Experiment at Beltsville, M.D.** Fohrman, M. H., McDowell, R. E., & Lee, D. H. K. (1953). U.S. Dept. of Agric., Bureau of Dairy Industry, BDI-Inf.-128.

the animals were exposed for a six-hour period to a temperature of 105° F. and 34 mm. Hg vapour pressure (92° F. wet bulb). Hourly observations were made of body temperature, respiration rates, amount of visible wetness of the skin, and any other indications of severe environmental stress in the animal. The average rise in rectal temperature was significantly less in the cross-breds than in the Jerseys at various ages, stages of lactation and levels of production. From these figures the authors concluded that, on the average, resistance to high temperature was greater in the F1 crosses than in the Jerseys, whether they were compared as heifers or dry or lactating cows.

J. O. L. K.

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The Diagnosis of *Vibrio foetus* Infection*

The author considers the vaginal secretion agglutination test to be of use as a subsidiary aid in the establishment of a herd diagnosis of *Vibrio foetus* infection.

Samples which are collected from the vagina by hand tend to be contaminated with soap and other material. The collection of samples by suction is therefore preferable, but this is difficult except during oestrus, when the test gives erratic results due to the dilution of the agglutinins by the oestral flow. The author therefore advocates the use of a vaginal tampon to absorb the thin secretion of the vaginal wall.

The preparation of these tampons is described in detail. Each one is prepared from a previously weighed 3- by 3-inch surgical "sponge" of cotton gauze. This is tied to a length of string and carried in a 12- by ¾-inch glass tube. The tube is inserted into the vagina and the tampon pushed out with a glass rod. The tampon is left in position for 20 min tes before being withdrawn by means of the string and placed in a jar of known weight. The author states that, using this method, he has sampled 30 cows in less than an hour.

At the laboratory, the jar is weighed together with its contents, and, since the weight of the empty jar and unused tampon are known, the weight of the sample can be calculated. Sufficient formalinised (0·3 per cent.) normal saline is then added to give a dilution of 1 : 12·5 and the mixture transferred to the first tube of the agglutination test. The preparation of the antigen is also described.

The author states that these secretions are easier to use than vaginal mucus because of their thin consistency. A comparison of the two methods showed that the tampon samples gave almost twice the number of positive reactions.

The author emphasises the need for work on the antigenic structure of vibrios as this would put the use of both the serological and the vaginal secretion agglutination tests on to a sounder basis.

[The author does not mention that serological agglutination tests may be useful in the study of an infected herd if the antigen used can be prepared from an isolation from the same herd.—*Abstractor.*]

E. A. G.

* **A Study of the Diagnosis of Bovine Vibriosis with Special Reference to Detection of Agglutinins in the Vaginal Secretions.** Hughes, D. E. (1953). *Cornell Vet.* **43.** 431–444.

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Intracaudal and Subcutaneous Vaccination of Calves with *Br. abortus*, S.19*

The first paper in this series compared the serological responses which followed calfhood vaccination with either 1·0 ml. intracaudally or 5·0 ml. subcutaneously; the second compared immunity during pregnancy in the second year after vaccination. This third paper compares the immunity during the third year after vaccination. Groups of about 20 cattle, vaccinated by one or other of these methods and then exposed to natural infection (an artificially created "abortion storm") for the first time, both showed significantly reduced rates for abortion as compared with the controls, but there was no significant group difference. At the same time two slightly larger groups consisting of animals which had been vaccinated by either method and which had resisted infection on first exposure in the second year after vaccination, were exposed to a second infection in the third year after vaccination. A good immunity persisted and there was no significant difference between the two groups. The three papers indicate that there is no significant difference between the immunity produced by these two methods of vaccination.

J. S. P.

* **A Comparison of the Effects of Intracaudal and Subcutaneous Vaccination of Calves with *Brucella abortus*, Strain 19. 3.—Immunity in the Third Year after Vaccination.** Gregory, T. S. (1953). *Aust. Vet. J.* **29.** 98–103.

The Use of Portable Pens in the Control of Diseases of Dairy Calves*

In view of the high mortality due to respiratory and parasitic conditions encountered in calves reared indoors, the authors decided to compare different methods of housing and record in this article their experience over a 10-year period relating to 340 calves.

The different methods of housing were :—

(1) Individual stalls in a barn.

(2) Pens indoors with raised slatted floors.

(3) Small standard pens with metal railings at the ends and wooden sides, inside the main dairy barn.

(4) Concrete isolation pens.

(5) Small portable outdoor units.

The portable pen has a simple rectangular structure 16 by 8 feet with open wire sides, 3 feet of one end being roofed over with a galvanised sheet and in winter the sides protected by some cheap light material. In the portable pens the animals were almost free of parasites for five and a half years except for Strongyloides. None were affected with lung worms. Winter temperatures fell to as low as 9° F. with an average of 15·37° F. but the health of the animals was as good as, if not better than, in any of the other groups. Moreover, the system was very effective in controlling accidental clinical coccidiosis and preventing the transmission of pneumonia, paratuberculosis, parasitism, and white scours to other calves.

Calves in the portable pens require less attention than under any of the other systems and over the period of the trial the mortality was only 8·88 per cent. as compared with 75 per cent. under No. 4, 56·5 per cent. under No. 3, 7·1 per cent. on the slatted floors (No. 2), and 52 per cent. in the barn stalls (No. 1).

The portable pen system was also employed for investigating the life history of various intestinal parasites and in order to reduce the chances of natural infection from the ground calves were fitted with sheet-metal muzzles. These, however, proved unsuitable as a practical method for rearing calves. Growth was poor and out of 92 calves studied 25 per cent. died under two weeks and another 35 per cent. subsequently, before the experiment was terminated. Twenty-four of the animals had pneumonia.

[The portable outdoor system of folding calves is now under investigation in this country and is giving hopeful results.]

N. S. B.

* **Portable Pens Compared with Other Enclosures for Control of Diseases of Dairy Calves.** Davies, L. R., Bowman, G., *et al.* (1952). *Vet. Med.* **47.** 485–490.

IN PARLIAMENT

INTERDEPARTMENTAL COMMITTEES ON SLAUGHTERHOUSES

Interim Report for England and Wales

We reproduce below the summary of recommendations contained in the Interim Report of the Interdepartmental Committee on Slaughterhouses which was published on Friday, January 29th.*

(i) That the responsibility for licensing private slaughterhouses should remain with the local authority for the district during the interim period prior to the implementation of moderate concentration. (Paragraph 45 (*a*)).

(ii) That no slaughterhouse, irrespective of its class before the war, should have any privileged conditions to restrict the local authority in its consideration of the application for a grant or renewal of the licence for the premises. (Paragraph 45 (*b*)).

(iii) That local authorities should have discretion where they see fit to determine that the period of operation of a licence issued before July 1st, 1956, should run to July 31st, 1957. (Paragraph 45 (*c*)).

(iv) That the responsibility for seeing that sufficient slaughtering accommodation is available for the needs of each district in the period pending the implementation of moderate concentration affecting that district should be placed on the local authority. (Paragraph 48).

(v) That where a local authority is of the opinion that, during the period prior to the implementation of a scheme of moderate concentration affecting its district, public slaughtering accommodation is required for the needs of its district and, if necessary, for the needs of an adjoining or neighbouring district, it should be empowered, subject to such Ministerial approval as may be necessary, to acquire compulsorily or by agreement, either by purchase or on lease, any existing private slaughterhouse or slaughterhouses that can be used to provide public slaughtering facilities. (Paragraph 53).

(vi) That where a local authority is of the opinion that there is adequate slaughtering capacity available and that public slaughtering facilities are reasonably accessible to traders in its area for use during the interim period it should have powers to revoke the licence of any private slaughterhouse or to refuse the grant or renewal of the licence of any private slaughterhouse subject to the owner and occupier of such premises having the right of appeal to the Minister of Food and subject to the compensation on closure being assessed and paid on the basis of our two following recommendations. (Paragraph 59).

(vii) That the compensation should be an amount representing the diminution in market value, as at the date of closure, of the interest in land (including any buildings and plant) comprising the slaughterhouse and other land (including buildings) held therewith consequent upon the prohibition of the use of the slaughterhouse as such and that any dispute as to the amount of compensation should be determined by the Lands Tribunal set up by the Lands Tribunal Act, 1949. (Paragraph 61).

(viii) That during the interim period and during the period of implementing moderate concentration the cost of compensation in respect of private slaughterhouses closed by reason of the provision or existence of available public slaughtering facilities should be borne initially by the local authority of the district where slaughterhouses are closed and that the Government should make a grant to the authority of one half of this cost. (Paragraph 73).

Conclusion

Certain of these recommendations, if accepted, will require new legislation to amend appropriate sections of the Food and Drugs Act, 1938. In that event you will no doubt wish to consider whether an early announcement should be made by the Government so that all the interests concerned may be aware of the arrangements that will apply on decontrol. It is, we think, very important that local authorities should at once consult representatives of the local farmers and traders and make clear to them what action they propose to take in regard to slaughtering facilities to ensure the maintenance of meat distribution within their areas. It will not be practicable on decontrol to apply a national uniform code of hygiene in regard to the structure and design of private slaughterhouses. In general, a local authority should have regard to the public health requirements of its own district. The private slaughterhouses must not be allowed to slip back into the conditions of the pre-war disorders and numbers. Traders must, however, be given early notification whether they are to be permitted to resume private slaughtering or whether their needs will be met by the provision of public slaughtering facilities.

* Interdepartmental Committee on Slaughterhouses (England and Wales): Interim Report. Obtainable from H.M.S.O., York House, Kingsway, W.C.2, or from any bookseller, price 6d.

Interim Report for Scotland

The Department of Health for Scotland† also published its Interim Report on Slaughterhouses on Friday, January 29th, and the short extract gives a summary of the recommendations made to Parliament.

(1) The responsibility for ensuring that sufficient slaughtering accommodation is available during the interim period should be placed on local authorities. (Paragraph 20).

(2) Local authorities should be empowered:—

(*a*) to acquire existing slaughterhouses compulsorily or by agreement, subject to the consent of the Secretary of State. (Paragraph 21);

(*b*) to revoke or refuse to grant or renew licences for private slaughterhouses on grounds of redundancy—subject to a right of appeal to the Secretary of State (Paragraph 22) and subject to compensation on closure. (Paragraphs 22, 25, 26 and 27).

(3) The opening or licensing by local authorities of slaughterhouses not used as such during the control period should be subject to the consent of the Secretary of State. (Paragraph 23).

(4) It should be considered whether charges for use of a public slaughterhouse should be limited by the Secretary of State. (Paragraph 24).

† Department of Health for Scotland. Interdepartmental Committee on Slaughterhouses (Scotland): Interim Report. Obtainable from H.M.S.O. or any bookseller, price 4d.

Questions

Slaughtering of Livestock in Kent

Sir A. Bossom (January 27th) asked the Minister of Food (1) what steps he has taken to satisfy himself that there is enough manpower available to handle the slaughtering of livestock in Kent if the meat marketing scheme is implemented;

(2) if he is satisfied that there are enough appropriately placed and adequately equipped approved slaughterhouses to make the Government's plan for fatstock economically workable in the county of Kent.

Major Lloyd George: The Interdepartmental Committee on Slaughterhouses has made recommendations in an Interim Report about the procedure for assessing and reviewing the slaughtering requirements and facilities of each district on the decontrol of meat and livestock. This Report is to be published later this week.

Animal Feeding-stuffs

Mr. R. Robinson (January 27th) asked the Secretary of State for the Colonies what steps are being taken to encourage the production of animal feeding-stuffs in the West Indies.

Mr. Hopkinson: The measures which are already being taken include the purchase of guinea corn from small farmers, the manufacture of concentrates by Government Departments from corn-meal and rice milling residues, copra meal and citrus waste, and the fixing of guaranteed prices for feeding-stuffs. There is, however, a general shortage of carbohydrate feeding-stuffs and animal protein and this situation cannot be easily or quickly remedied. The recommendation of the industrialists' mission on this point is under consideration by the Governments.

NOTES AND NEWS

Diary of Events

Feb. 10th.—Meeting of the Editorial Committee at 7, Mansfield Street, Portland Place, W.1, 2.30 p.m.

Feb. 11th.—Royal (Dick) School of Veterinary Studies Annual Ball, in the Assembly Rooms, George Street, Edinburgh, 8.30 p.m. Proceeds to the Victoria Veterinary Benevolent Fund.

Feb. 11th.—Meeting of the Essex Veterinary Society at the Institute of Agriculture, Writtle, Nr. Chelmsford, 7.30 p.m.

Feb. 11th.—Annual General Meeting of the East Midlands Division, B.V.A., at the School of Agriculture, Sutton Bonington, 2.15 p.m.

Feb. 12th.—Annual Ball of the Glasgow University Veterinary Medical Association, the Rhul, Sauchiehall Street, Glasgow, 8 p.m.

Feb. 12th.—Annual General Meeting of the North of Ireland Veterinary Association, Union Hotel, Donegall Square South, Belfast, 5 p.m.

Feb. 16th.—Annual General Meeting of the Eastern Counties Veterinary Society, B.V.A., at the Bell Hotel, Norwich, 10.45 a.m. Joint Meeting with the Essex Veterinary Society, B.V.A., 2.15 p.m.

Feb. 17th.—Meeting of the Royal Society of Medicine at 1, Wimpole Street, W.1, 5 p.m.

Feb. 19th.—Annual General Meeting of the Lancashire Veterinary Association, B.V.A., at the Midland Hotel, Manchester, 2.30 p.m.

Feb. 19th.—Joint Meeting of the Hertfordshire and Bedfordshire Veterinary Society, B.V.A., and the Mid-Herts Division, B.M.A., at the Peahen Hotel, St. Albans, 8.15 p.m.

Feb. 19th.—Annual General Meeting of the Royal Counties Division, B.V.A., at the Caversham Bridge Hotel, Reading, 2.30 p.m.

Feb. 26th.—University of Liverpool Veterinary Society Annual Ball, in the Students' Union, Bedford Street, Liverpool

Feb. 26th.—Annual Ball of the Liverpool University Veterinary Society in the Union, Bedford Street, Liverpool, 8 p.m.

Mar. 18th.—Annual Dinner and Dance of the East Midlands Division, B.V.A., at the George Hotel, Nottingham, 7.15 p.m.

Mar. 25th.—V.V.B.F. Ladies' Guild: North of Scotland Division, B.V.A., Annual Dance, Aberdeen.

Mar. 26th.—Annual Dinner and Dance of the Yorkshire Division, B.V.A., Parkway Hotel, Leeds.

Sept. 19th—25th.—72nd Annual General Meeting and Congress of the British Veterinary Association at Torquay.

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PERSONAL

Birth.—Rham.—On January 17th, 1954, at Wayside, Barns Green, Horsham, to Patricia, wife of Geoffrey G. Rham, M.R.C.V.S., a daughter—Elaine Patricia—a sister for Michael Charles.

Forthcoming Marriage.—Hill—Vevers.—The marriage arranged between H. J. Hill, M.R.C.V.S., of Bedford, and Miss Edna E. A. Vevers, of Epsom, Surrey, will take place at St. Andrew's Church, Bedford, on Saturday, February 13th, 1954, at 12 noon.

Marriage.—Froyd—Zanker.—On Sunday, January 24th, 1954, at the Liberal Synagogue, Streatham, Gerald Froyd, M.R.C.V.S., of the Veterinary Department, Kabete, Kenya, only son of Mr. and Mrs. Freudenthal, Nanyuki, Kenya, to Ruth Zanker, only daughter of Dr. and Mrs. A. Zanker, of Croydon, Surrey.

Ministry of Agriculture Veterinary Field Staff.—Mr. A. M. Taylor, M.R.C.V.S., Veterinary Officer, has been transferred from Haverfordwest to New Forest.

Mr. A. M. Forsyth, M.R.C.V.S., has been appointed to the permanent staff as a Veterinary Officer and will be stationed at Preston.

RETIREMENT OF DR. J. RUSSELL GREIG

As indicated in the advertisement columns of this issue, the post of Director of the Moredun Institute will become vacant shortly. Intimation has been received that Dr. J. Russell Greig will be retiring in September after a period of 24 years in office as Director, and readers will be interested to know that we shall be publishing a biography of him in a later issue of *The Veterinary Record*.

MAJOR FRANK HOPKIN, O.B.E., M.R.C.V.S.

Our readers will learn, with much regret, that Major Frank Hopkin, O.B.E., M.R.C.V.S., is seriously ill at his home in Knutsford, Cheshire. Major Hopkin has been closely associated with the National Veterinary Benevolent and Mutual Defence Society for a long period, and has done a great deal of work for the organisation in an honorary capacity. He is well known to the profession through his services as Hon. Secretary and Treasurer to the Society, but he has now relinquished his more arduous duties.

CRUFT'S DOG SHOW CANCELLED

The Committee of Cruft's Dog Show Society decided to cancel the show which was to have opened at Olympia on Friday of this week. Because of the strike of electricians at Olympia it proved impossible to prepare the hall for the show.

The 4,500 exhibitors from all over the country who entered 5,956 dogs in the show have been notified of the decision individually, but at this stage it is not possible to estimate the loss to the Society.

The committee will consider the possibility of holding the show later this year, but it is unlikely that arrangements can be made for an alternative date. If Cruft's show were to be held later in the year it could have an adverse effect on entries at some of the other championship and smaller shows. Most dates are fully booked up, and on some Saturdays there may be as many as 40 shows in different parts of the British Isles. Plans are already in hand for next year's Cruft's show, which will be held at the end of the first week in February.

Many foreign buyers who attend the show annually have already arrived in this country. The export of thoroughbred dogs has increased steadily since the war, and last year the record number of 2,812 were sent abroad.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Fowl Pest:

Bucks.—Manor Farm, Nether, Winchendon (Jan. 27).

Dorset.—Heathland, Woodlinken Drive, Verwood, Wimborne (Jan. 28).

Essex.—The Bryn, Church Road, Basildon, Billericay (Jan. 26).

Glamorgan.—3, Upper Vaughan Street, Pwllgwaun, Pontypridd (Jan. 26).

Kent.—40, Rose Street, Sheerness (Jan. 27).

Lancs.—Oldfields, Croston, Preston; Longton Heys Field, Walmer Bridge, Preston (Jan. 27); North Road, Bretherton and Pompion Brow, Bretherton, Preston (Jan. 28); Heyhouses Farm, Heyhouses Lane, St. Annes (Jan. 28).

Lincs.—Hill Top Farm, Welbourn, Lincoln (Jan. 28).

Northants.—The Ivy, Wilby, Wellingborough (Jan. 28).

Salop.—The Green Farm, Ashford, Carbonel, Ludlow (Jan. 28).

Yorks.—401, Huddersfield Road, Wyke, Bradford; 103, South Terrace, Wales Bar, Sheffield; Waingate Allotments, Linthwaite, Huddersfield (Jan. 27); 18, New Lane, East Ardsley, Wakefield (Jan. 28).

Swine Fever:

Cambs.—91, High Street, Cottenham (Jan. 26); 229, High Street, Cottenham (Jan. 27); 29, Rook Street, Cottenham (Jan. 28).

Ches.—Grey Roofs, Wrenbury, Nantwich; Faddiley Lodge, Faddiley, Nantwich; Ivy House, Wrenbury, Nantwich (Jan. 26).

Cornwall.—Blowing House Hill, Perrancoombe, Perranporth (Jan. 26).

East Lothian.—Fenton Newmains, Drem, North Berwick (Jan. 26).

Essex.—Rose and Crown Inn, Tolleshunt Knights, Tiptree (Jan. 28).

Isle of Ely.—Balcony Farm, Cromwell Road, Wisbech (Jan. 27).

Lancs.—Halton Road Piggeries, Lancaster (Jan. 28).

Staffs.—Sandbank Farm, Rushton, Macclesfield (Jan. 28).

Suffolk.—Mortimers Farm, Preston, Sudbury; "Fairleas," Chapel Road, West Row, Bury St. Edmunds; Grape Cottage, The Street, Freckenham, Bury St. Edmunds (Jan. 26).

Surrey.—The Retreat Farm, Chertsey Lane, Thorpe, Egham (Jan. 26); Island Farm, High Street, West Molesey (Jan. 27).

Somerset.—Heath House Farm, Corsley, Warminster (Jan. 26).

Yorks.—85, Leads Road, Stoneferry, Hull (Jan. 28).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

THE ANIMAL HEALTH TRUST

Sir,—It would be quite illogical for me to permit a statement, wrongly reported as being made by me at the Centaur Society Dinner at Bristol University, to be used in your columns to bolster an attack on the Animal Health Trust, seeing that I have been a member of Council of that body almost since its inception, a member of its Finance and General Purposes Committee and, latterly, a member of its Scientific Advisory Committee. I can, therefore, claim intimate knowledge of its organisation and achievements which are fully set out in the annual reports which have been issued to date, and which explain in detail the *raison d'être* of the Trust and its relationship to the profession.

The need to make oneself fully cognisant of the facts—if one is to be fair—before indulging in what may be considered by many as ill-informed Press correspondence capable of inflicting very great harm on its target, is demonstrated when it is claimed that I, at Bristol, paid "a great and just tribute to the general practitioners." As a general practitioner I am afraid I should have felt some considerable embarrassment in paying such "a great and just tribute" to a body which included myself. According to my notes of the speech I was very honoured to make that night, I suggested that it was particularly appropriate that a general practitioner should be the guest of honour on that particular occasion, seeing that 1954 would see the first of the Bristol students entering the ranks of the profession and that a high responsibility attached to them in view of the fact that the University School would be judged, for a period at least, by the calibre of its first graduates. I then recommended that whatever sphere they intended to enter they should seek a period in general practice. That led me to refer "to the old adage that the practitioner is the backbone of the profession." I proceeded to wonder, in my speech, whether this oft-repeated expression could, in fact, be justified.

I pointed out that if it was based upon preponderence in numbers it did not make sense if one remembered the proportion of the vertebral column to the whole skeletal structure. I then ventured to suggest that each and every branch of the profession had an equal importance in which great opportunities existed for all, but that success was dependent upon an enthusiastic approach. When one remembers the interdependence of each and every branch of the profession to-day, and how closely they are related to future progress and advancement, an exaggerated claim to greater importance of any one branch, even if it does happen to be the largest branch of the profession, would be extremely hard to countenance.

I have supported the Trust both on its committees and financially. I believe it to be an organisation which has already made a considerable contribution to our profession. The need for independent research organisations has been amply demonstrated in all scientific spheres in the past.

Do your critical correspondents really imagine that that not inconsiderable number of members of the profession, those members of other professions and sciences, and those leaders of industry who give their services voluntarily on the many committees of the Animal Health Trust—the Ministry of Agriculture, by the contribution it has made to the continuance of the Poultry Research Station as an independent research establishment; organisations such as the National Farmers' Union; the Milk Marketing Board; sporting organisations such as the Thoroughbred Breeders' Association, the Greyhound Racing Association, and the Kennel Club, etc., and the Farming Press—would give their support to such an organisation, unless they thought it had already made a contribution to research in veterinary science and was capable of continuing to do so, subject to the support of interested parties which surely must include those engaged in agriculture and the veterinary profession?—Yours faithfully, G. N. Gould, 12, Landguard Road, Southampton. *January 29th*, 1954.

Sir,—As a non-veterinarian who has, however, had some experience in connection with work supported by voluntary contributions, I should be grateful for an opportunity to rebut Mr. Chipperfield's remarks on "financial prudence." What subscribers desire is that their contributions shall be effectively and efficiently spent, and they are more likely to subscribe if they know that good work has been done, and the cost of it, than if they are merely given promises or expressions of good intentions. When, therefore, an opportunity of doing some valuable piece of work arises, financial prudence dictates that one shall seize the opportunity of doing it while that opportunity lasts, even if this means drawing upon one's reserves in the hope that its value will be evident to subscribers and lead them to make good the deficit. Anyway, the money is given to be used, not misered.—Yours faithfully, C. W. Hume, 284, Regent's Park Road, Finchley, London, N.3. *January 23rd*, 1954.

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BONE CYST IN THE DOG

Sir,—In Mr. Gourley's interesting article on the above subject he states that a search of the literature failed to reveal any reference to radiographs of bone cyst in the dog.

Apparently Mr. Gourley had not searched *all* the veterinary literature as a reference to and a description of the condition appear on pages 562 and 568 of the fourth edition of Kirk's "Index of Diagnosis." Reference will also be found in Schnelle's "Radiography of the Dog and Cat."—Yours faithfully, H. Kirk, "Croyland," 658, Finchley Road, Golders Green, N.W.11. *January 29th*, 1954.

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DISEASE IN RABBITS AND HARES

Sir,—From November, 1953, to January, 1954, inclusive, there has been a heavy mortality among wild rabbits and hares in the Avon valley area between Cranborne and Salisbury (Damerham, Martin, Rockbourne, Breamore, Downton, Charlton, etc.). During this period, 28 rabbits and six hares, mostly picked up dead or suspected of disease, were examined by the writer.

In the 29 cases where a satisfactory diagnosis could be made, death was due to the following causes:—

Thirteen, Coccidiosis of small intestine (*Eimeria perforans*).

Seven, *Pasteurella pseudotuberculosis* (also infected with *Eimeria perforans*).

Six, wounds and haemorrhage (also infected with *Eimeria perforans*).

Two, Neoplasms.

One, rabbit syphilis (*Treponema cuniculi*).

All the diseased animals, especially the rabbits, carried an unusually heavy worm burden consisting of *Graphidium strigosum, Trichostrongylus retortaeformis, Passalurus ambiguus* and *Cittotaenia* spp. Evidence of similar widespread disease during the same period was also received from other parts of the country, including Hampshire, Wiltshire, Ross-shire, Angus and Huntingdon.

In view of the public interest in myxomatosis, it seems worth emphasising that large numbers of rabbits may be found dying from other causes. Accurate diagnosis is essential before attributing any obvious epidemic to myxomatosis. This disease has not yet been seen in the Avon valley area.—Yours faithfully, P. A. Clapham, I.C.I. Game Research Station, Fordingbridge, Hants. *January 29th*, 1954.